USVI Annual Air Monitoring Network Plan 2020

Table of Contents

Tables

U.S. Virgin Islands Monitoring Network Plan 2020

Introduction

The annual network plan describes to the US Environmental Protection Agency which pollutants and other parameters the US Virgin Islands Department of Planning and Natural Resources Division of Environmental Protection measures at its different ambient air monitoring sites and why they are measured at those specific locations.

Based on population, 40 CFR Part 58 does not require monitoring in the US Virgin Islands for CO, O3, NO2, PM10 and PM2.5. Based on sources, 40 CFR Part 58 does not require monitoring in the US Virgin Islands for SO2, and Pb. The Division of Environmental Protection (DEP) currently operates two (2) monitoring stations for particulate matter in ambient air. One (1) of the sampling stations is located on St. Croix and one (1) is located on St. Thomas.

The objective of the Virgin Islands air monitoring network is to determine the exposure of PM2.5 and PM10 on the population. The goal is to provide ambient data that supports the nation's air quality programs. The ambient data from this network will drive an array of regulatory decisions, ranging from designating areas as attainment or non-attainment, to developing cost effective control programs. Data from this program will also be used for the National Ambient Air Quality Standards (NAAQS) comparisons, development and tracking of implementation plans, assessments for regional haze, and assistance for health studies and other aerosol research activities.

The Virgin Islands maintains the PM10 FRM sampler to collect data on Sahara Dust episodes passing through the Territory which is more prevalent in the summer months. These episodes of dust storms appear to be passing through the region before summertime more frequently. These events can be documented through sampling and verified through the US Naval website www.nrlmry.navy.mil/aerosol/ and the San Juan Weather Service. The PM10 concentrations in the US Virgin Islands are highest and reach closest to the 24-hour standard of 150 ug/m^3 during these episodes.

There have been questions locally whether these Sahara Dust episodes are contributing to the increase in emergency room visits by asthmatics, or other individuals with respiratory illnesses. PM10 data can be utilized if the VI Department of Health decides to conduct a health study on whether there is a correlation between increase emergency room visits and Sahara Dust.

The following is the PM_{10} and $PM_{2.5}$ monitoring network plan description which is available to the public for comment. After that review period it must be submitted to the Regional Administrator for approval (40CFR § 58.20).

Bethlehem Village

Table 1

Site Location	Bethlehem Village
Site Address	Bethlehem Village Management Office
Site Specific Name	Bethlehem Village
AQS Number	78-010-0012
VI County	St. Croix
Statistical Area	US Virgin Islands
Coordinates	Latitude 17°42'48.57" N Longitude 64°47'0.33" W

The Bethlehem Village site was established in July 1979. This site was originally established to Sample for Total Suspended Particulate (TSP). TSP monitoring ended in 1995. PM_{10} Federal Reference Method (FRM) began in 1996 and $PM_{2.5}$ FRM monitoring began in 1999. The PM10 primary and collocated FRM samplers were shut down at the site in 2017. The parameters monitored are indicated in the following table:

Table 2

Parameter	Sampling Instrument	AQS Method Code	Analysis Method	Schedule	Spatial Scale
$PM_{2.5}$ FRM	Met ONE E-FRM	221	gravimetric	1 in 6 day	Neighborhood
$PM_{10-2.5}$	Teledyne API T640X	240		continuous	Neighborhood

Monitoring objective statement:

Population Exposure

Statement of Purpose statement:

The goal of the Particulate Matter, two and a half microns or less ($PM_{2.5}$) and Particulate Matter ten microns or less (PM_{10}) monitoring program is to provide ambient data that supports the nation's air quality programs.

The ambient data from this network will drive an array of regulatory decisions, ranging from designating areas as attainment or non-attainment, to developing cost effective control programs.

Data from this program will also be used for the National Ambient Air Quality Standards (NAAQS) comparisons, development and tracking of implementation plans, assessments for regional haze, and assistance for health studies and other aerosol research activities.

This site was established to maintain compliance with the regulations.
This site is suitable for comparison against the annual $PM_{2.5}$ NAAQS standard.

Plan Changes for Next 18 Months

There are no planned changes for the next 18 months.

Waterfont/ Vendor's Plaza

Table 3

Site Location	Waterfront/Vendor's Plaza
Site Address	# 8 Tolbod Gade
Site Specific Name	Vendor's Plaza
AQS Number	78-030-0010
VI County	St. Thomas
Statistical Area	US Virgin Islands
Coordinates	Latitude 18°20'26.70" N Longitude 64°55'50.93" W

This site began data collection with continuous TEOM 1400A samplers in 2007 for Particulate Matter ten microns or less (PM_{10}) and Particulate Matter two and a half microns or less ($PM_{2.5}$) sampling. Since 2016, only a $PM_{2.5}$ continuous monitor has been operated at the site.

The parameters monitored are indicated in the following tables:

Table 4

Parameter	Sampling Method	AQS Method Code	Analysis Method	Schedule	Spatial Scale
$PM_{2.5}$ FEM	Teledyne API T640	236		Continuous	Neighborhood

Monitoring objective statement:

Population Exposure

Statement of Purpose statement:

The goal of the Particulate Matter two and a half microns or less ($PM_{2.5}$) monitoring program is to provide ambient data that supports the nation's air quality programs. The ambient data from this network will drive an array of regulatory decisions, ranging from designating areas as attainment or non-attainment, to developing cost effective control programs.
Data from this program will also be used for the National Ambient Air Quality Standards (NAAQS) comparisons, development and tracking of implementation plans, assessments for regional haze, and assistance for health studies and other aerosol research activities.

This site was established for reporting daily air quality, especially in instances of Sahara dust storms from the Sahara Desert in Africa, and volcanic ash from the Volcano on the Caribbean island of Monseratt. These storms are passing through the territory throughout the year. There are six levels in the Air Quality (AQI) Index. Each section has a color code level of health concern and AQI value range. This gives the public a better understanding of the air quality.

Plan Changes for Next 18 Months

There are no planned changes for the next 18 months.

References

1. 40 Code of Federal Regulations. U.S. Environmental Protection Agency Part 58 Ambient Air Quality Surveillance Subpart B, C and D.

2. U.S. Environmental Protection Agency. Air Quality System Database.